

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

No claims are currently being added or cancelled.

Claims 1, 4-8 and 10 are currently being amended.

This amendment and reply amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1, 4-8 and 10 are pending in this application.

Request for Interview:

Pursuant to a telephone call to Examiner Mercado in mid-October, 2007, in which Applicant's Representative requested an interview to be conducted, and whereby Examiner Mercado suggested that such a request be made in writing in a response to be filed with the PTO, this paragraph corresponds to that request, whereby Examiner Mercado indicated that, if this response still leaves one or more issues unresolved, he will contact Applicant's Representative, Phillip Articola, at 202-672-5535, in order to try to resolve those issues.

Specification Objection:

In the Office Action, the specification was objected to because of a minor grammatical error on page 8, line 13. By way of this amendment and reply, the specification has been amended to correct that minor grammatical error.

Claim Rejections 35 U.S.C. § 112, 1st Paragraph:

In the Office Action, claims 1, 4-6, 8 and 10 were rejected under 35 U.S.C. § 112, 1st Paragraph, as failing to comply with the written description requirement, for the reasons set forth on pages 2 and 3 of the Office Action. Based on the amendments made to independent claims 1 and 6, whereby the phrase **"includes a table of voltage-current characteristics of the fuel cell stack during start-up"** has been deleted, this rejection is now moot.

Claim Rejections – Prior Art:

In the Office Action, claims 1, 4-6, 8 and 10 were rejected under 35 U.S.C. § 102(e) as being anticipated by, or, in the alternative, under 35 U.S.C. § 103(a), as being obvious over U.S. Patent No. 6,580,977 to Ding et al. This rejection is traversed with respect to the presently pending claims under rejection, for at least the reasons given below.

First, please note that the term "voltage level" has been changed to "target voltage level" in independent claims 1 and 6. Also, the term "electric power level" has been changed to "target electric power level" in independent claim 7. Support for these changes may be found, for example, on page 7, line 15 of the specification. Second, please note that the phrase "at a give rate" has been added at the end of the phrase "to perform a reduction of a target electric power level" in claims 1, 6 and 7. Support for this added feature to claims 1, 6 and 7 may be found on page 9, line 35 of the specification.

Third, please note that the specify the word "threshold" of electric current level and electric power level in independent claims 1, 6 and 7 has been further defined such that "the first and second thresholds are based on a voltage current characteristic during the start-up of the fuel cell stack to a completion of the start-up". Support for this added feature to claims 1, 6 and 7 may be found in Figure 3 of the drawings and on page 10, lines 20-33 of the specification.

Turning now to the rejection raised in the Office Action, it asserts that column 7, line 46 to column 8, line 2 of Ding et al. teaches numerous instances where the reduction of the electric power level supplied from the secondary battery is interrupted. See, for example, the teaching in column 7 line 54 et seq., "If $P_{req} > P_1$, the strategy issues a command 146 to use the FCS 44 as load following and the battery 54 to provide power assistance (such as to meet a power deficiency) until SOC drops to SOCb2."

However, this citation in Ding et al. shows that electric power control is not performed at a time during an FCS 44 start-up or during a load change. It should be noted here that the presently claimed invention is defined such that electric power control is performed at a time during a start-up of a fuel cell stack.

As best understood, only page 6, lines 23-39 and Figure 5 of Ding et al. discloses electric power control at a time during a FSC 44 start-up. The Ding et al. device provides a load with the electric power from a battery 54 according to the charge state (SOCb) thereof in

a time during a FCS 44 start-up (Figure 5). Although it cannot readily be understood from the Ding et al. specification how to measure SOC_b and SOC_f (charge state of the FCS 44) and how to determine the lower limit (SOC_{bl}) of SOC_b and the lower limit (SOC_{fl}) of SOC_f, please note that Ding et al. uses only two kinds of electric currents (can_{in}_curr_{aval} 46 and can_{in}-max_{curr} 52) of the battery in its measurement, as seen in Figure 1 of Ding et al.

On the other hand, during a start-up of a fuel cell stack 1, the presently claimed invention decreases the output electric power supplied from a battery 7 and then switches the electric power supply source to a load from the battery 7 to the fuel cell stack 1 in order to stabilize the electric power supply from the fuel cell stack 1.

In summary, the Ding et al. technology is based on a charge state of a battery used in the discrimination of switching electric power supply from a battery to a fuel cell system. On the other hand, the presently claimed invention recites the use of first and second thresholds of both electric current and voltage of a fuel cell stack, whereby the first and second thresholds are predetermined according to a voltage-current characteristic during from the start-up of the fuel cell stack to the completion of the start-up.

Accordingly, presently pending independent claims 1, 6 and 7 are not anticipated by and are not obvious over Ding et al.

Furthermore, with respect to dependent claim 4, the temperature dependency of electric power characteristic of the fuel cell stack 1 are utilized during from the start-up of the fuel cell stack 1 to the completion of the start-up. Such features are not disclosed, taught or suggested by Ding et al.

Thus, dependent claim 4 is patentable over Ding et al. for these additional reasons.

Conclusion:

Since all of the issues raised in the Office Action have been addressed in this Amendment and Reply, Applicant believes that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment,

to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date October 25, 2007

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